

Claims

1. 1. Electric-motor driven parking brake in particular for a vehicle, comprising:
  2. - an electric brake-actuating motor, in particular a commutator motor,
  3. - a brake-actuating output shaft which extends along a second axis and is driven by the electric brake-actuating motor,
  4. - a brake-actuating linkage which is arranged so that it can move parallel to a first axis which is essentially perpendicular to the second axis,
  5. - a drive linkage from the brake-actuating output shaft to the brake-actuating linkage in the form of a cam disk or gate guide which is cam-like in the sense that it converts a rotation of the brake-actuating output shaft into a translational movement of the brake-actuating linkage by means of an actuation element which is guided along a surface of the cam disk or gate guide,
  6. - wherein the surface of the cam disk or gate guide forms a height profile in a radial direction, and
  7. - the orientation of the motor axis of the electric brake-actuating motor is essentially perpendicular to the second axis.
1. 2. Parking brake in accordance with Claim 1, further comprising:
  2. - a worm drive in the drive train between the electric brake-actuating motor and the brake-actuating output shaft.
1. 3. Parking brake in accordance with Claim 1, wherein
  2. - the cam disk or gate guide being shaped with the intention that an essentially constant load is exerted on the electric brake-actuating motor over essentially the entire brake-actuation cycle.
1. 4. Parking brake in accordance with Claim 1, further comprising
  2. - at least one rest position in the surface of the cam disk or gate guide with the intention of effecting a fixed positioning, which is self-locking with respect to restorative forces, of the actuation element.

- 1    5.    Parking brake in accordance with Claim 4, wherein
- 2    -    the rest position is located at the position on the surface of the cam disk or gate
- 3    guide at which the actuation element is located when the parking brake is pulled
- 4    on with essentially nominal force.
  
- 1    6.    Parking brake in accordance with Claim 4, wherein
- 2    -    at least one further rest position is arranged in the surface of the cam disk or gate
- 3    guide.
  
- 1    7.    Parking brake in accordance with Claim 1, wherein
- 2    -    a gearbox, which links the brake-actuating output shaft to the motor shaft, is of
- 3    self-locking construction.
  
- 1    8.    Parking brake in accordance with Claim 1, further comprising
- 2    -    an additional leverage conversion between the actuation element and the brake-
- 3    actuating linkage.
  
- 1    9.    Parking brake in accordance with Claim 4, wherein
- 2    -    the rest position takes the form of a depression in the surface of the cam disk or
- 3    gate guide.
  
- 1    10.    Parking brake in accordance with Claim 1, wherein
- 2    -    the motor axis runs parallel to the first axis.

- 1    11. Electric-motor driven parking brake in particular for a vehicle, comprising:
  - 2    - an electric brake-actuating motor having a first drive axis,
  - 3    - a brake-actuating output shaft which extends along a second axis which is
  - 4    substantially perpendicular to the first axis and is driven by the electric brake-
  - 5    actuating motor,
  - 6    - a brake-actuating linkage which is arranged so that it can move along a line
  - 7    parallel to the first axis,
  - 8    - a drive linkage from the brake-actuating output shaft to the brake-actuating
  - 9    linkage which translates a rotational movement around the second axis into a
  - 10   longitudinal movement parallel to the first drive axis.
- 1    12. Parking brake in accordance with Claim 11, further comprising a cam disk or
- 2    gate guide which is cam-like in to convert a rotation of the brake-actuating
- 3    output shaft into a translational movement of the brake-actuating linkage by
- 4    means of an actuation element which is guided along a surface of the cam disk
- 5    or gate guide,
- 6    - wherein the surface of the cam disk or gate guide forms a height profile in a
- 7    radial direction, and
- 8    - the orientation of the motor axis of the electric brake-actuating motor is
- 9    essentially perpendicular to the second axis.
- 1    13. Parking brake in accordance with Claim 11, further comprising:
  - 2    - a worm drive in the drive train between the electric brake-actuating motor and
  - 3    the brake-actuating output shaft.
- 1    14. Parking brake in accordance with Claim 12, wherein
- 2    - the cam disk or gate guide being shaped in such a way that an essentially
- 3    constant load is exerted on the electric brake-actuating motor over essentially the
- 4    entire brake-actuation cycle.

- 1    15. Parking brake in accordance with Claim 12, further comprising
- 2    - at least one rest position in the surface of the cam disk or gate guide for effecting
- 3    a fixed positioning, which is self-locking with respect to restorative forces, of
- 4    the actuation element.
  
- 1    16. Parking brake in accordance with Claim 15, wherein
- 2    - the rest position is located at the position on the surface of the cam disk or gate
- 3    guide at which the actuation element is located when the parking brake is pulled
- 4    on with essentially nominal force.
  
- 1    17. Parking brake in accordance with Claim 15, wherein
- 2    - at least one further rest position is arranged in the surface of the cam disk or gate
- 3    guide.
  
- 1    18. Parking brake in accordance with Claim 11, wherein
- 2    - a gearbox, which links the brake-actuating output shaft to the motor shaft, is of
- 3    self-locking construction.
  
- 1    19. Parking brake in accordance with Claim 11, further comprising
- 2    - an additional leverage conversion between the actuation element and the brake-
- 3    actuating linkage.
  
- 1    20. Parking brake in accordance with Claim 15, wherein
- 2    - the rest position takes the form of a depression in the surface of the cam disk or
- 3    gate guide.